

MULTI-SEQUENCE ALIGNMENT	
1	MKKRTLSLFVGLMLLIGLFLSGSLPYNPNAEAESSSSASVKGDVYIQQIDRFYDGDFTNN 60
1	MKKRTLSLFVGLMLLIGLFLSGSLPYNPNAEAESSSSASVKGDVYIQQIDRFYDGDFTNN 60
61	NPASKSYGLDPDKSKWKMWGGDLEGVQKLPLKQLGVTIWLSPVLDNLDLTLAGTDNT 12
61	NPASKSYGLDPDKSKWKMWGGDLEGVQKLPLKQLGVTIWLSPVLDNLDLTLAGTDNT 12
121	GYHGWTDRDFQIEHFGNWTFPTDLYNDAHQNGIKVIVDFPHSTPPKANDSTFAEgg 18
121	GYHGWTDRDFQIEHFGNWTFPTDLYNDAHQNGIKVIVDFPHSTPPKANDSTFAEgg 18
181	ALYNNTGMYNFDATKGYFHNGDLSNDDDRYEAMWKNTDFAGEFSLADLSQENGTA 24
181	ALYNNTGMYNFDATKGYFHNGDLSNDDDRYEAMWKNTDFAGEFSLADLSQENGTA 24
241	QYLTAAVQLYAHAGDLRIDAVKHENSGFSKSLADLKQKKDIFLYGEWYGDPPGTANH 300
241	QYLTAAVQLYAH - - GLRIDAVKHENSGFSKSLADLKQKKDIFLYGEWYGDPPGTANH 299
301	LEKRYANNSGVNVLDLDTNTVIRNFGETFTOMYDLMNNMYNOTGNEYKYKENLTIFIDN 366
298	LEKRYANNSGVNVLDLDTNTVIRNFGETFTOMYDLMNNMYNOTGNEYKYKENLTIFIDN 355
361	HDMSRFLSYNS - NKANLHQ ALAFIITSLRG - PSIYGTQEYTMAGGGDPYNRGMMPAFDT 417
358	HDMSRFLSYNSKNNKANLHQRLSFSL - RGYRPPPIYGTQEYTMAGGGDPYNRGMMPAFDT 415
418	TTAFAKEVSTLAGLERNNAAIQTGTTQRWNNNDYYIYERKFFNDVYLVATRNTOSSYS 477
416	TTAFAKEVSTLAGLERNNAAIQTGTTQRWNNNDYYIYERKFFNDVYLVATRNTOSSYS 475
478	ISGLQALPNSYADYLSGLGGNGISVNGSVASFTLAPGAVSYQYQSTSASAPQIGSV 537
476	ISGLQALPNSYADYLSGLGGNGISVNGSVASFTLAPGAVSYQYQSTSASAPQIGSV 535
538	APNAGIPGRVVTIDKGFRSTTQGTVTFGGTATYVSWTSRIVVEYVPPNMAGLTDYKVTAA 597
536	APNAGIPENVTIDKGFRSTTQGTVTFGGTATYVSWTSRIVVEYVPPNMAGLTDYKVTAA 595
598	GGYSSNLYSYNLSGTQTVVVFYKSAAPTNLGDKIYLTGNIPELGWNSTDTSGVAYNNAQ 657
596	GGYSSNLYSYNLSGTQTVVVFYKSAAPTNLGDKIYLTGNIPELGWNSTDTSGVAYNNAQ 655
658	GPLLAPNPYDWFYVFSPVAGKTIQKFKEFKRADGTIOWENGNSNHVATTPGATGNTVTV 717
656	GPLLAPNPYDWFYVFSPVAGKTIQKFKEFKRADGTIOWENGNSNHVATTPGATGNTVTV 715
718	QN 719
716	QN 717
SEQUENCE FROM N.A.	
STRAIN=8;	
MEDLINE=91103970; PubMed=1368573;	
Nitschke L., Heeger K., Bender H., Schulz G.E.;	
"Molecular cloning, nucleotide sequence and expression in Escherichia	
coli of the beta-cyclodextrin glycosyltransferase precursor (EC 2.4.1.19)	
(Cyclodextrin-glycosyltransferase) (Cgtase).	
Bacillus circulans.	
Bacteria; Firmicutes; Bacillales; Bacillaceae; Bacillus.	
[1]	
SEQUENCE FROM N.A.	
STRAIN=8;	
MEDLINE=91103970; PubMed=1368573;	
Nitschke L., Heeger K., Bender H., Schulz G.E.;	
"Molecular cloning, nucleotide sequence and expression in Escherichia	
coli of the beta-cyclodextrin glycosyltransferase gene from Bacillus	
circulans strain no. 8;"	